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JUNE 2009



Aid for Facilities

Schools and universities are benefiting from economic stimulus funds.

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AMERICAN SCHOOL & UNIVERSITY
SHAPING FACILITIES & BUSINESS DECISIONS

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One Flu Over



This spring, many people across the country were scrambling for masks and hand sanitizer. The National Pork Producers Council was trying to do damage control (and maybe still is).

Although the recent outbreak of the H1N1 virus (a.k.a. the swine flu) may seem like yesterday's news, it's important to note that every state was affected by the pandemic, and some areas are still dealing with it to varying degrees. Was your school or campus prepared? If not, summer might be a good time to prepare a plan for next year and beyond.

The U.S. Department of Health and Human Services and the Centers for Disease Control have put together checklists to help administrators prepare for the effects of a flu pandemic, but these also can apply to other emergencies. Some starting points:

•Identify a pandemic coordinator and response team with defined roles and responsibilities for preparedness, response and recovery planning.

•Work with local and state health departments and other community partners to establish organizational structures.

•Share what you have learned from developing your plan with other institutions to improve community response efforts. Discuss ways to pool resources.

•Develop scenarios describing the potential impact of a pandemic on student learning, school closings and extracurricular activities. Develop alternative procedures to ensure continuity of instruction in the event of school closures.

•Work with the local health department to establish effective infection-prevention policies and procedures. Make good hygiene a habit now in order to help protect children and staff.

•Procure, store and provide sufficient and accessible infection-prevention supplies, such as soap, alcohol-based/waterless hand-hygiene products, tissues and waste receptacles.

•Keep accurate records of when and why children and staff are absent. Establish sick-leave policies for employees and students suspected to be ill or who become ill on campus.

Information and detailed checklists are available at http://www.pandemicflu.gov. ■



slustig@asumag.com

WEB 101

How tweet it is

Do you Twitter? If you've been awake at all lately, you've probably at least heard of it. According to Twitter, it is "a service for friends, family, and co–workers to communicate and stay connected through the exchange of quick, frequent answers to one simple question: What are you doing?"

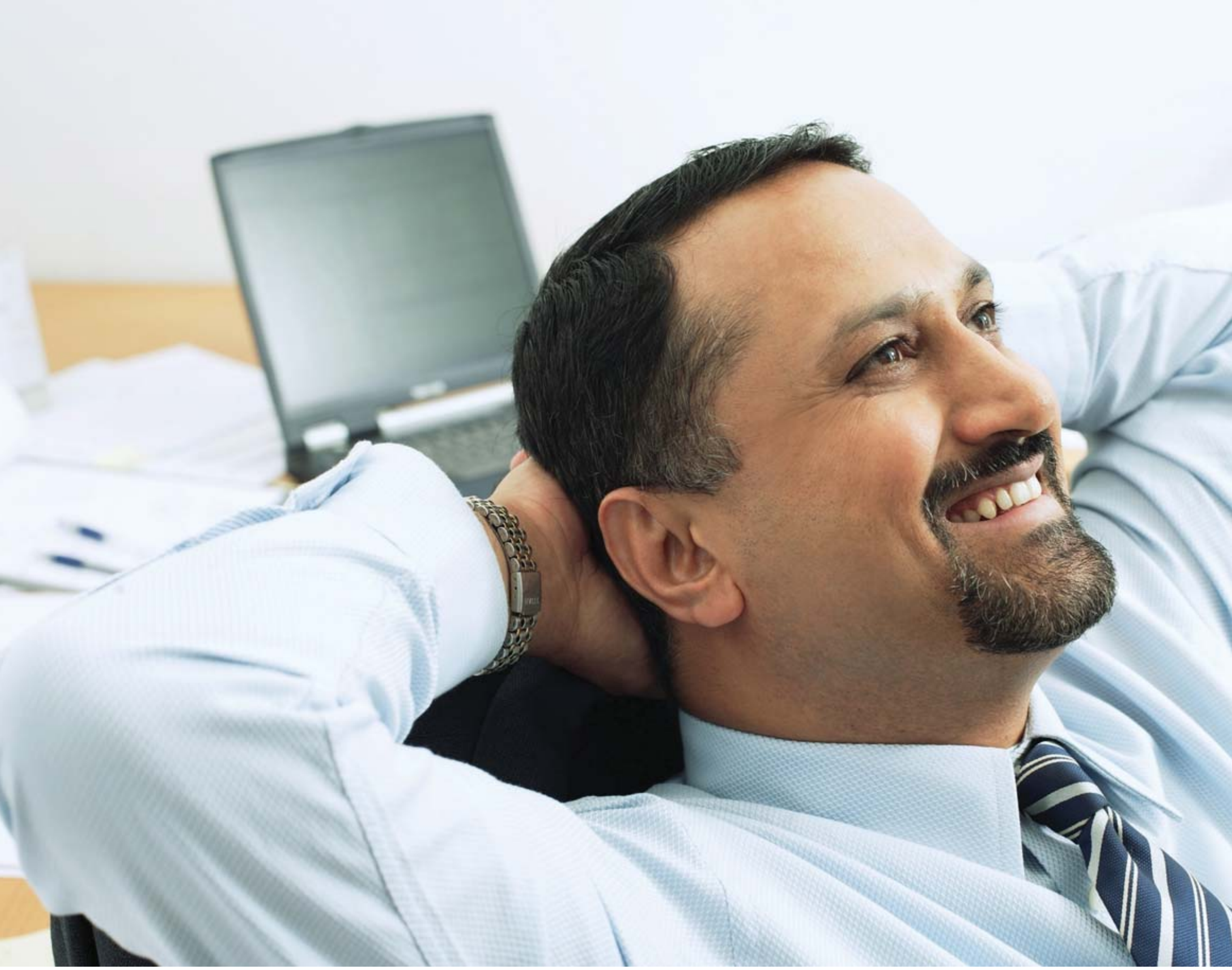
One important thing to note: the question can only be answered in up to 140 characters (that's really not a lot!). So although Twitter is no place for people who ramble on and on, it also can be seen as a nuisance because people "tweet" about things that may be of no concern, such as "I am cooking spaghetti." Perhaps only interesting to those invited to dinner?

Here at the magazine, Twitter is an interesting vehicle to get the word out about interesting news stories, or maybe a quick message that you can see the latest issue in advance when the digital version hits the Internet.

Disclaimer: We will not be telling you how we feel about the current weather or whether we are wearing blue shirts on a certain day (unless you want us to), but we will keep you informed of important happenings in the industry and with the magazine.

So if you want to know what we are up to, join (if you haven't already) and follow us at http://twitter.com/ASU_magazine.

twitter





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INSIDE: ENERGY

GARBAGE POWER FUELS NEW HAMPSHIRE CAMPUS

The graduation ceremony held this spring for the Class of 2009 at the University of New Hampshire in Durham was powered by landfill gas.

Before 2,200 students received their diplomas on May 23, university president Mark Huddleston officially launched EcoLine, a project that captures methane gas generated at a landfill in Rochester, N.H., and transports it via a 12.7-mile pipeline to a cogeneration plant on the Durham campus. There, the gas is converted to energy that helps power the campus.

The university says it expected to receive up to 85 percent of the energy used on campus from the EcoLine project. The school spent about $49 million on the project and anticipates a payback within 10 years.

SCHOOL DISTRICTS SALUTED FOR ENERGY CONSERVATION

The U.S. Department of Energy and the Environmental Protection Agency have named four school districts as 2009 Energy Star award winners.

The Council Rock (Pa.) School District, Nash-Rocky (N.C.) Mount Public Schools and Whitefish Bay (Wis.) School District were named Energy Star partners of the year. The Gresham-Barlow (Ore.) School District received an Energy Star award for sustained excellence.

Gresham-Barlow, which has been an Energy Star partner of the year twice before, was recognized for successfully growing and expanding its Resource Conservation Management program.

Council Rock was saluted for adopting an energy policy in November 2005 that quickly surpassed its initial goal of improving energy efficiency by 10 to 15 percent. Nash-Rocky Mount was recognized for establishing a program that has reduced energy use in district buildings by more than 20 percent. Whitefish Bay was honored for an energy-management strategy that has saved more than $1 million since 2003.

LSU STUDENTS UNPLUG TO SAVE ENERGY

Students living in nine residence hall communities at Louisiana State University in Baton Rouge reduced their energy consumption in March by $13,763—an average of 18 percent—as part of the school's "Unplug" competition.

The contest compared the March 2009 electrical meter readings with those from March 2008. Students were asked to adjust their daily routines—turning off lights, unplugging chargers, taking shorter showers—to save energy in campus residence halls and apartments.

East Campus Apartments achieved the greatest reduction—a 35 percent reduction compared with the same timeframe in 2008. All residents there have received a 1-gigabyte flash drive for their accomplishment.

The Horseshoe community, which reduced consumption by 29 percent, finished second in the competition, and the Blake/McVoy community and Herget Residential College tied for third place with a 21 percent reduction in energy consumption. ■

IMPACT OF LSU'S UNPLUG COMPETITION

Energy saved: 172,034 kilowatts
That could power the following for a month:
20,000 light bulbs
7,000 computers
200 homes
Carbon offset: 124 metric tons
That is the equivalent of:
Planting 3,168 trees
Not driving 270 cars for one month
Saving 14,000 gallons of gasoline
Source: LSU, Department of Residential Life

CONSTRUCTION ZONE

GREEN/SUSTAINABLE DESIGN

Green wraparound

The 259,218-square-foot Eastern View High School, Culpeper, Va., was designed to resemble a school wrapped around a community center. The classrooms, flexible learning areas, auditorium, media center and teacher suite all feature technological tools and spaces designed to promote collaboration, enrich learning and foster a sense of community. Internal glazing and the extensive use of glass give the impression of openness with light spaces, yet also allow for quiet or semi-private areas, helping to facilitate passive supervision, showcase learning and promote security.

Each grade level has its own house surrounding a resource area that uses a large skylight to bring natural light into interior spaces. The flexible space can be used for student collaboration, small-group instruction or large-group exercises.

The school, designed to receive LEED certification, incorporates natural ventilation, polished concrete floors, lighting controls, Energy Star-compliant roofing and geothermal wells. In addition, it was sited to protect and incorporate existing wetlands on the 67-acre property.

Architect is SHW Group (Reston, Va.).



Eastern View High School, Culpeper, Va.
Photo courtesy of SHW Group



Washington University, Danforth University Center, St. Louis.

Green challenges

The 115,880-square-foot Danforth University Center at Washington University, St. Louis, has achieved LEED gold certification. The three-story center, completed last July, houses WUTV-TV, *Student Life* newspaper, the student union, student and faculty dining areas, conference rooms, campus-life offices, a game room and a common area. It also offers three outdoor courtyards and plazas.

Built over a three-story 520-car parking garage, the $43 million center features reinforced concrete with a granite stone facade, complementing the Collegiate Gothic architecture displayed throughout campus.

As designs for the center began, the university's four-story Central Underground Garage was simultaneously in final stages of construction. The plans called for the center to be built above the garage, minimizing effects on the landscape and maintaining the best use of space.

The project was designed to receive LEED certification, but with great effort from all team members, the project jumped from certified to gold standard. Although the upgrades to gain LEED points were significant, the changes were managed precisely to maintain the original schedule and budget. One major upgrade was the addition of a 50,000-gallon underground rainwater-harvesting storage tank on the project site. The water from this system is used for landscape irrigation.

Other changes included rapidly renewable resources in place of other resources, such as wool instead of nylon for carpet, bamboo instead of oak, and an increased amount of linoleum overall; and daylight harvesting through the installation of sensors that track the amount of natural light in a room.

The architect is TSOI/Kobis & Associates (Cambridge, Mass.); Clayco Inc. (St. Louis) was design-builder.

Completion: July 2008
Cost: $43 million
Project area: 115,880 sq. ft.

Committed to green

The new Simmons School of Management (SOM), Simmons College, Boston, embodies the college's commitment to sustainable development. The project, which opened in January, recently earned LEED gold certification.

The project included a 66,500-square-foot academic center and new green space, the Simmons Quadrangle, on the site of a former parking lot. The design conceals parking for 700 cars in a five-level subterranean garage.

Simmons School of Management is the nation's first business school designed for women. This project has been included in the curricula in environmental science and ethics/philosophy, further enhancing the sustainable mindset at the college.

The building is oriented to capitalize on natural light and views; 90 percent of the indoor space receives daylight. The design also includes a partially vegetated roof and a high-albedo, low-emissivity roof to mitigate stormwater runoff and the heat-island effect. Recycled steel, carpet and ceiling tiles also are used throughout, and 90 percent of construction waste was recycled. Furniture and finishes incorporate sustainable materials and manufacturing practices. Bamboo is used extensively in millwork, office desk surfaces and in the lobby.

High-efficiency lighting and control systems reduce energy expenditures and incorporate telephone, data and fire-alarm systems. The building's wall envelope should surpass standard performance by 25 percent.

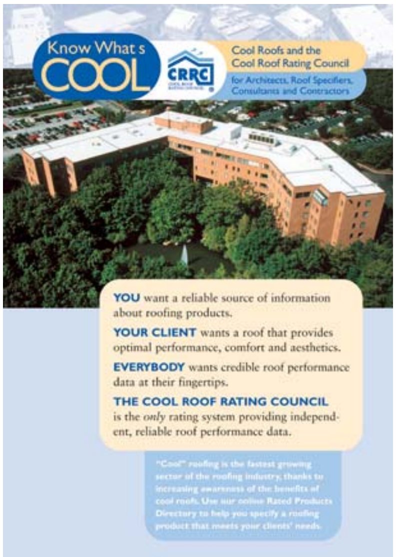
Architect for the project is Cannon Design (Boston). ■



Simmons School of Management and Academic Building, Boston.
Photo courtesy of Esto Photographics, Inc.

Roofing

Materials that reflect heat away from a building can help schools and universities consume less energy.



Cool Roof Rating Council brochure.
Photo courtesy of www.coolroofs.org

Around this time of year, when the sun is beating down on thousands of school roofs, facility managers are looking for ways to stay cool. One way to do that is to keep school buildings from absorbing the heat from those intense summer rays. And it's up on the roof where that heat is absorbed—or reflected, if a school or university has installed a cool roof on the facility.

A cool roof is made of materials that are able to reflect much of the sun's energy from a roof surface. For the low-slope roofs that are found on most school facilities, cool roofs are mainly bright white in color, the Cool Roof Rating Council says.

A guide from the U.S. Environmental Protection Agency, "Reducing Urban Heat Islands: Compendium of Strategies," says that for low-slope roofs, the two primary cool-roofing options are coatings and single-ply membranes. Typically, the guide says, a cool roof coating is used if an existing roof needs moderate repair, and a single-ply membrane is used for more extensive repairs.

Coatings "have the consistency of thick paint and contain additives that improve their adhesion, durability, suppression of algae and fungal growth, and ability to self-wash, or shed dirt under normal rainfall," the guide says.

The cool roof coatings can be applied to many existing surfaces, including asphalt capsheet, gravel, metal and various single-ply materials.

The common single-ply membrane materials used for cool roofs are EPDM (ethylene propylene diene monomer), CSPE (chlorosulfonated polyethylene), and PVC (polyvinyl chloride) and TPO (thermoplastic olefins).

"The materials are generally glued or mechanically fastened in place over the entire roof surface, with the seams sealed by taping, gluing, or heat-welding," the guide says.

The benefits of a cool roof, the Cool Roof Rating Council says, include reduced summer air-conditioning costs, reduced costs for roof maintenance and replacement, a reduction of the heat-island effect in cities and suburbs, reduced air pollution and smog formation, and reduced roofing waste added to landfills.

The Council says that one potential drawback of cool roofs is that they can increase heating costs in winter months. However, the increase is usually small because in most of the nation, the sun is low in the sky in the winter, the weather tends to be overcast, and snow often covers roofs, the council says. So the increase seen in winter months usually is outweighed by the cooling energy saved in the summer. ■ *–Mike Kennedy*

NOTABLE

50 to 60 In degrees Fahrenheit, the difference in temperature between a roof made with traditional materials and a roof with highly reflective and emissive materials.

10 to 70 In percent, the reduction in cooling energy on buildings that have cool roofs.

0 to 20 In cents per square foot, the estimated cost premium for cool roof products.

Source: U.S. Environmental Protection Agency, "Reducing Urban Heat Islands: Compendium of Strategies"

Aid for



Facilities

BY MIKE KENNEDY

Economic stimulus funds from the federal government provide numerous avenues for schools and universities to improve facilities.



Even before the state fire marshal ordered the Somersworth (N.H.) School District in 2007 to abandon the top two floors of Hilltop Elementary School because of safety concerns, folks in the city of 12,000 had been debating whether the aging facility should be replaced—and how to pay for it.

Finally, in February 2009, despite the grumblings from residents who thought Somersworth couldn't afford it, the city council approved plans to issue $19.9 million in bonds to pay for construction of a new 450-student elementary school.

Three months later, the price tag became a little easier to swallow when the New Hampshire School Building Authority awarded Somersworth $19.9 million in zero-interest Qualified School Construction Bonds, part of the federal government economic stimulus package.

Somersworth is one of many communities whose schools and universities stand to benefit from the stimulus—formally known as The American Recovery and Reinvestment Act of 2009—that Congress approved to help the U.S. economy regain its health.

"It's going to save us $12 million to $15 million over the life of the bonds," says Karen Soule, superintendent of School Administrative Unit 56, which includes the Somersworth district.

Many avenues to aid

Preliminary versions of the economic stimulus legislation in Congress proposed allocating billions of dollars to pay for school facility upgrades—a version passed by the House called for $16 billion in school construction funding. But after House and Senate negotiators got together to work out differences and craft the final bill, that provision was eliminated from the $787 billion package.

Still, the recovery effort offers schools and universities various subsidies, grants, tax credits and other incentives to alleviate the cost of modernizing and constructing facilities.

Among those:

•**State Fiscal Stabilization Fund**. The U.S. Education Department describes this as a one-time appropriation of about $48.6 billion that the department will award to governors to help minimize and avoid reductions in education and other essential services. In return, a state must commit to pursuing four



Zero-interest bonds authorized in the federal stimulus package will help Somersworth, N.H., replace Hilltop Elementary School. Photo courtesy of Somersworth (N.H.) School District

areas of education reform: making improvements in teacher effectiveness and in the equitable distribution of qualified teachers; establishing pre-K-to-college-and-career data systems that track progress and foster continuous improvement; making progress toward rigorous college- and career-ready standards and high-quality assessments; and providing targeted, intensive support and effective interventions for the lowest-performing schools.

School systems can use the funds for facility improvements, but the department is discouraging use of the funds for new construction (see sidebar, p. 20).

•**Qualified School Construction Bonds**. The program provides $22 billion of bond authority ($11 billion in 2009 and $11 billion in 2010 for states and school systems. The legislation calls for 40 percent of the authority to go to the nation's 100 largest districts, plus 25 additional systems that the education department determines to be in need. The remaining 60 percent will go to states, using a formula that is based on Title I funding for disadvantaged students. School systems that issue the bonds pay no interest—they repay only the principal.

•**Qualified Zone Academy Bonds**. Schools or districts with 35 percent or more of their students eligible for free or reduced-price lunches have $2.8 billion in zero-interest bonds ($1.4 billion in 2009 and $1.4 billion in 2010) available to be used on school renovations and other educational improvements.

•**Build America Bonds.** These bonds can be issued by state and local governments and will give them access to the conventional corporate debt markets, the U.S. Treasury Department says. The Treasury Department will reimburse the state or local governmental issuer 35 percent of the interest payment. That enables state and local governments to reduce their borrowing costs and reach more sources of borrowing.

•**Impact Aid.** $100 million is available for construction aid to school systems that serve military bases or Indian reservations.

•**Bureau of Indian Affairs School Construction.** $277 million is available—$134 million to replace deteriorating Bureau-funded schools, and $143 million to repair existing facilities.

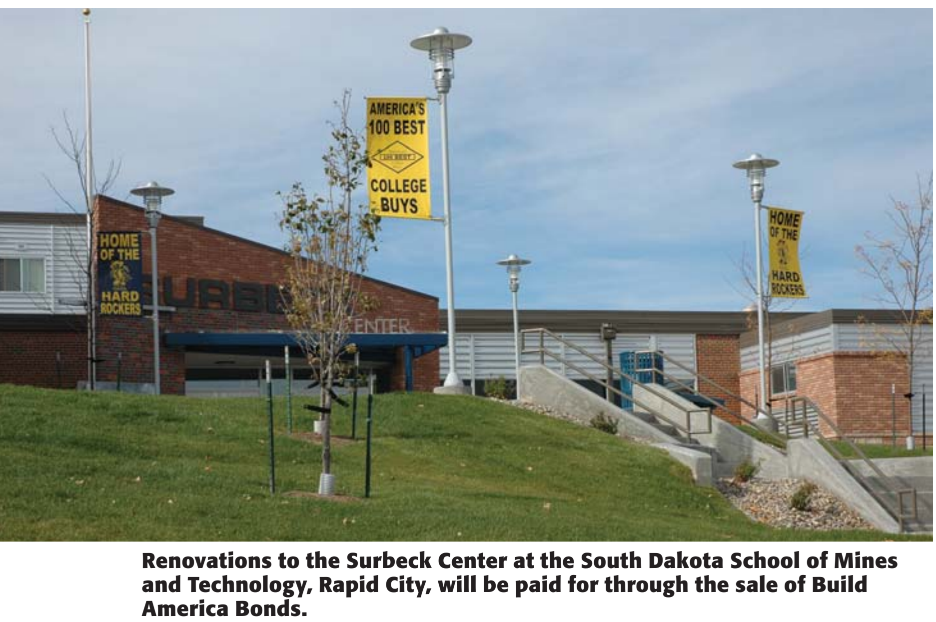
•**Academic Research Infrastructure.** The National Science Foundation has a $200 million program that will award grants of up to $10 million for repairing or renovating academic research facilities. The foundation is encouraging proposals that will improve shared space where research activities take place as well as facility projects that will promote the devel-

First in line

The San Diego Unified School District achieved the distinction in April of becoming the first school system to sell Qualified School Construction Bonds as authorized in The American Recovery and Reinvestment Act.

As one of the largest districts in the nation with more than 110,000 students, the economic stimulus package gave the San Diego district the authority to issue $38.8 million in the zero-interest bonds.

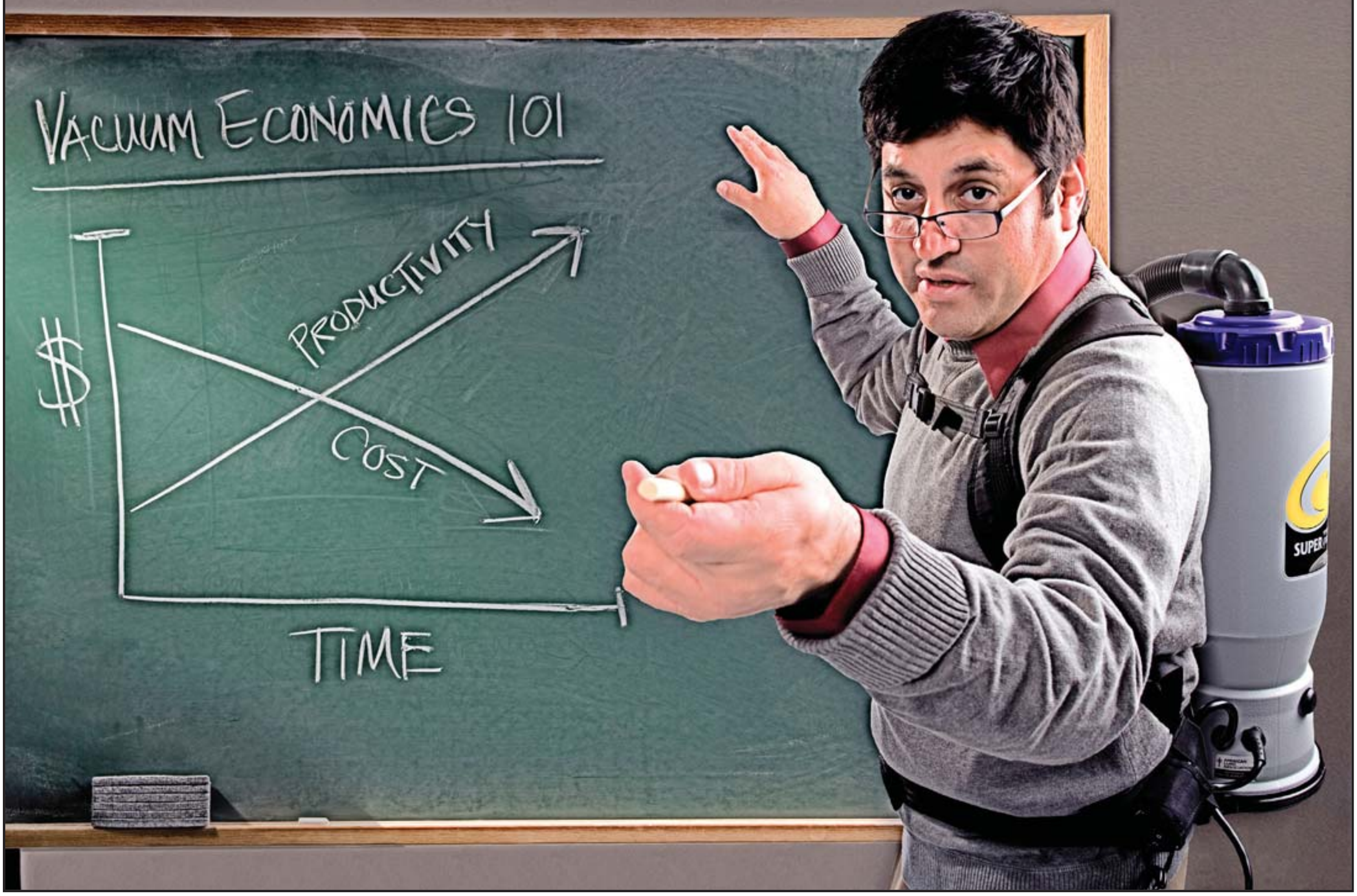
The bonds will pay for some of the $2.1 billion construction program known as Proposition S, which voters approved in November 2008.



Renovations to the Surbeck Center at the South Dakota School of Mines and Technology, Rapid City, will be paid for through the sale of Build America Bonds.

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opment of a diverse workforce.

•**Biomedical and Behavioral Research Facilities.** The National Institutes of Health has $1 billion to award as grants to institutions seeking to construct, renovate or repair biomedical or behavioral research facilities.

•**Research Science Buildings.** The National Institute of Standards and Technology (NIST) will distribute $120 million in grants for construction of scientific research buildings at higher-education institutions and nonprofit organizations. NIST says eligible projects include laboratories, test facilities, measurement facilities, research computing facilities and observatories. In addition, NIST will award another $60 million in grants to proposals that were submitted in fiscal 2008 but not funded.

•**Rural Community Facilities Program.** The Recovery Act provided $1.1 billion to the Department of Agriculture to make loans for rural areas and towns of up to 20,000 people to develop "essential community facilities." The department says units of local government, including education institutions, can use the money for facility acquisition, construction, renovation, or the purchase of equipment and furnishings. In addition to the direct loans, the department also has $61 million available in grants for projects in communities with smaller populations and lower incomes.

•**Energy Efficiency Block Grants.** The Department of Energy has $3.2 billion for grants to states and local governments. The money can be used for "energy efficiency and conservation programs and projects community wide, and renewable energy installations in or on government buildings," the department says.

•**State Energy Program.** The U.S. Department of Energy has received $3.1 billion in recovery funds for this program, which awards grants to states for energy-efficiency and renewable-energy projects. The types of projects that would receive grants include state and local building retrofits that are ready to start with additional funding; and programs that incorporate sustainable strategies, such as performance contracting.

Zero interest stirs interest

To get a sense of how much Somersworth, N.H., welcomes the Qualified School Construction Bonds that will soften the financial impact of building a new elementary school, one has to understand how difficult it was for the city to get to the point where people would support such a project.

The people in Somersworth knew they had to address the inadequate



University of South Dakota, Grace L. Beede Hall and George T. Mickelson Hall, Vermillion. The residence hall renovations will be paid for by Build America Bonds. Photo courtesy of University of South Dakota

Yes, you may—but maybe you shouldn't

When the economic stimulus package was approved, the U.S. Education Department guidelines stated that local education agencies (LEAs) were allowed to use Education Stabilization funds for new construction. But in May, the department revised its guidelines to say, "Yes, but … "

"An LEA … may use the funds to support the construction of new school buildings," the Education Department stated. "However, the Department discourages LEAs from using Education Stabilization funds for new construction because this use of funds may limit an LEA's ability to meet other essential needs or implement necessary reform initiatives."

The department makes a distinction between new construction and modernization. It is not discouraging school systems from using stabilization funds for modernization, renovation or repair.

The statement also warns states and school systems that Education Secretary Arne Duncan will take into account whether they have used stabilization funds for new construction when he decides who will get some of the $5 billion in competitive grants under his discretion.

The Education Department plans to conduct a competition among states for a $4.35 billion "Race to the Top" fund to improve education quality and results. Another $650 million will be available through the "Invest in What Works and Innovation" fund. Districts and non-profit groups with a strong track record of improving education will compete for those funds, the department says.



Build America Bonds also will benefit South Dakota State University, Brookings, with a student union expansion.
Photo courtesy of Eric Landwehr

conditions at Hilltop Elementary, but like a lot of communities trying to make ends meet, they kept putting off the hard decisions.

State officials tried to force the city to act in August 2007. Two weeks before classes were to begin, the state fire marshal ruled that the second and third floors of Hilltop had significant fire-safety problems and had to be closed.

School officials scrambled to acquire portable classrooms to begin the school year on time. While the community debated whether Hilltop could be renovated, the district spent more than $250,000 on portables and additional transportation costs.

The city council, as well as the school board, was required to approve any plan for a new school. In December 2007, the council approved the purchase of a site. The school board concluded that even if safety issues were resolved, Hilltop, a 25,000-square-foot facility built in 1927, could not be renovated or expanded to become an effective 21st-century learning space. In June 2008, the board approved a $19.9 million plan for a 74,300-square-foot, K-5 elementary school.

And the debate went on. The city council in September 2008 voted 5-4 in favor of the project, but a two-thirds majority was needed for approval. In January 2009, Lyonel Tracy, the commissioner of education in New Hampshire, delivered a tongue lashing in a letter to Somersworth Mayor Michael Micucci:

"I am disappointed by your comment that some in the community do not see a need to move forward. How can that be when the State Fire Marshal has found it necessary to close two-thirds of the building? The Hilltop School building is not safe for your children to occupy …. The continued lack of action by the City Council is disturbing. Something must be done."

And, finally, something was done. The city council approved the plan in February, but not without misgivings about spending $19.9 million. So when the state awarded Somersworth the zero-interest bonds, much of the anxiety about moving forward was eased, Soule says.

"This is such an opportunity for us," she says. "This will allow us to expand and have enough space for years to come."

Soule expects the new elementary to open in 2011.

Build America

For schools and universities with construction projects already in the works, Build America Bonds enable them to get a better deal on the bonds they are selling.

Education institutions using the program receive a federal subsidy equal to 35 percent of the interest costs of the bonds. In effect, the subsidy results in a lower interest rate for school systems while making the bonds more attractive for buyers.

The Olathe (Kan.) district used the Build America Bond program in May to sell $95 million in bonds, says Gary Diener, Olathe's executive director of business and finance.

Among the projects those bonds will help pay for are a new junior high, and for additions at all four district high schools so that the campuses can accommodate ninth-graders.

In South Dakota, the Board of Regents has approved the sale of $90 million in Build America Bonds to pay for projects at four campuses, says Janelle Toman, director of information and institutional research for the regents. Those include a new residence hall and an expansion of the student union at South Dakota State University in Brookings; a new residence hall and a student wellness center at the University of South Dakota in Vermillion; renovations of residence halls and a student center at the South Dakota School of Mines and Technology in Rapid City; and a residence hall renovation at Northern State University in Aberdeen. ■

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20th Annual

Residence Hall

Construction Report



University of New Hampshire, Southeast Residential Community, Durham. Photo courtesy of David Maurand

By Joe Agron

Even in difficult economic times, colleges and universities continue to invest in residence hall construction projects as a way to attract new students and keep existing ones on campus.

According to data from *American School & University*'s 20th annual Residence Hall Construction Report, the median new project completed in 2008 was less expensive than the previous year in both total cost and cost per resident, and provided fewer total square feet. Although smaller in total size, new housing facilities accommodated more residents than those projects completed the year before, resulting in fewer square feet per student.

Data collected from 23 new residence hall projects completed in 2008 follow. Among the findings: the median new residence hall completed in 2008 was 60,000 square feet (down from 69,125 square feet in 2007) and accommodated 242 residents at a total cost of $8.5 million (compared with 204 residents and $11 million the year before).

Although the percentage of single-sex facilities and other specialized arrangements (such as housing for couples and families) increased from the year before, co-educational facilities remain the predominant type of new residence hall (68 percent).

With regard to financing new residence hall construction, a growing trend seems to be individual colleges/universities working in conjunction with private firms. Of those projects completed in 2008, 39 percent were paid for by a combination of institutional and private financing (compared with 16.6 percent in 2007).

The charts and tables that follow provide data by averages and medians, as well as list the various amenities provided in new residence hall facilities. For additional data, go online at ASUmag.com. Look for the "Web Exclusive" icon throughout this survey that will direct you to a special online area—and exclusive data not found in the print version on residence hall construction expenditures, amenities and trend information for the past decade.

Continued...

Residence hall construction (2008):

Variable	Median	Average
Cost ($ millions)	$8.5	$13.5
Size (Sq. Ft.)	60,000	80,627
Residents	242	279
Cost/Sq. Ft.	$142	$167
Sq. Ft./Resident	248	289
Cost/Resident	$35,124	$48,387

CLICK 101

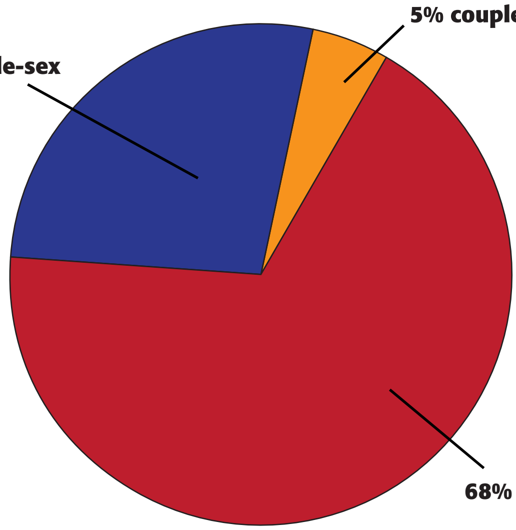
WEB EXCLUSIVE

•TIMELINE: Housing costs—A decade of data

•CHART: Carpeting and air conditioning in residence halls

ASUMAG.COM/EXCLUSIVE

Makeup of new residence halls (2008)



Amenities in residence halls completed in 2008:

Air conditioning	99%
Carpeting	71%
Cafeteria/dining hall	0%
Classrooms	29%
Computer access to library	46%
Electronic access to building	67%
Electronic access to rooms	25%
Elevators	67%
Fitness Center	21%
Internet access—wired	79%
Internet access—wireless	75%
Kitchen	63%
Laundry	79%
TV rooms/lounge	79%

Project Snapshot:

Phased living

The architect for this $40 million project initially developed a phased residential master plan for 1,450 new beds on 15 acres in the southeast quadrant of the University of New Hampshire's Durham campus.

In order to facilitate phased development, and to keep the scale of the buildings consistent with the existing context, the final plan is a series of six buildings clustered around various-sized courtyards and outdoor activity areas.

In phase I, two of the new residence halls abut an existing family housing cluster, thus clear definition of outdoor space and circulation was essential. In phase II, the building includes a mix of four- and six-bed suites and traditional double bedrooms. SERC A, B and C are all a mix of room types and offer interior common space, including main lounges, floor lounges, laundry facilities, kitchens, and residence hall and director apartments and offices. All of the facilities are air-conditioned.

Ultimately, with the completion of all phases, the residential community plans to include a small amphitheater, walking/biking paths, and a waterfront park. Environmental sustainability was a key consideration in the development of the site.

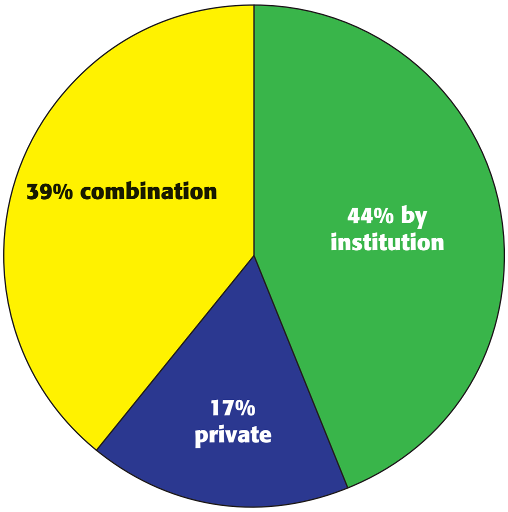
Architect for the project, which was completed in August 2008, is JSA Inc. (Portsmouth, N.H.)



University of New Hampshire, Southeast Residential Community, Durham.
Photo courtesy of David Maurand

How new residence hall construction was funded

(percentage of projects, 2008)



CLICK 101

WEB EXCLUSIVE

•TIMELINE: Amount of square feet per resident—10 years of data

ASUMAG.COM/EXCLUSIVE

At a glance

Overview of the median new residence hall constructed in 2008:

- **Cost**: $8.5 million
- **Size**: 60,000 square feet
- **Residents**: 242
- **Cost/Sq. Ft.**: $142
- **Sq. Ft./Resident**: 248
- **Cost/Resident**: $35,124

Project Snapshot:

Living and learning

Mount Ida College, Newton, Mass., has built the first new hall at the college since Malloy Hall was built in 1992. The new building, which houses about 130 students, represents the next generation of student housing. The three-story, 36,000-square-foot brick and stucco structure has an innovative design, modern technologies and energy-efficient features.

The building features two wings joined by glass bridges that glow at night. Two outdoor courtyards connected by a grand and open staircase surround the building. The courtyards tie the edges of the campus together and provide outdoor gathering places.

Living and learning spaces that encourage student interaction are an integral part of the design. The interior combines the best elements of more traditional residence halls into a "pod" design. Each of the six pods is a small community of 22 students who live in different types and sizes of rooms surrounding a common bath area. Lounges and study alcoves are situated in the bridges and hallways between the two wings on each floor.

The third floor of the North Pod houses a "quiet/study" living-learning community, and the top floor of the South Pod houses the 21+ floor, where students of legal age are permitted to possess alcoholic beverages in limited quantities.

The new hall also was designed to meet today's technology needs. All rooms have high-speed Internet access, and the entire building and surrounding courtyards have wireless Internet access. The building utilizes a one-card system that tracks entry into the building.



Mount Ida College, new residence hall.
Photo courtesy of Anton Grassl/Esto

Funded by revenue bond debt and philanthropic support, the residence hall was completed in May 2008. The project was designed by Finegold Alexander + Associates, Inc. (Boston) and constructed by Cutler Associates (Worcester, Mass.).

Agron can be reached at JAgron@ASUmag.com.
Research conducted by Elinor Rice, senior research manager, Penton Media.



Schools can achieve maximum use of facilities by using ADA-compliant washroom accessories and plumbing fixtures installed at the appropriate mounting heights.

Easy Access

Following ADA accessibility guidelines helps staff and students, and keeps schools in legal compliance.

By Alan Gettelman

School and university restrooms, locker and shower rooms have specific ADA accessibility requirements that serve the needs of staff, students and campus visitors who are disabled as a result of injury, illness or age. Taking good care of them is good for your reputation as a sensitive community institution, and fosters positive public relations. Adherence to accessibility guidelines also helps schools comply with civil-rights law, which is enforceable by the Department of Justice.

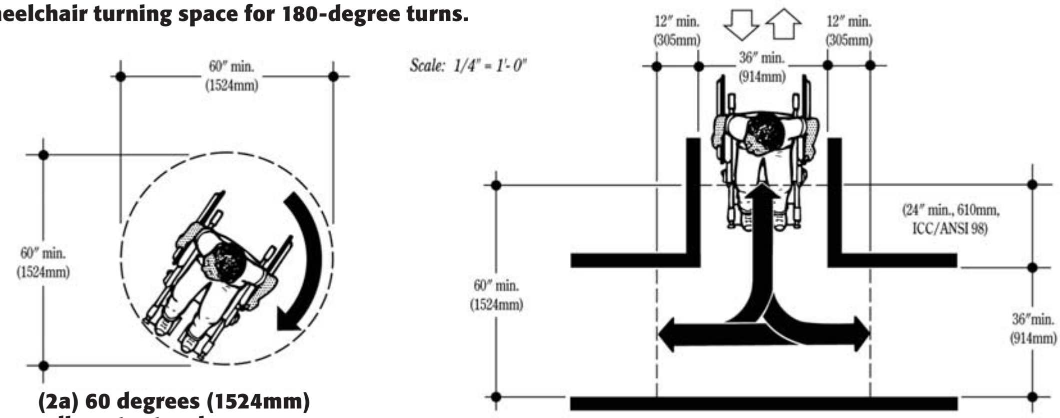
Following are some recommendations for accessible school washrooms:

Mounting heights and turning space

Figure 1: Recommended mounting heights for washroom accessories. (Information in blue is for children)



Figure 2: Wheelchair turning space for 180-degree turns.



(2a) 60 degrees (1524mm) diameter turning space

(2b) T-shaped turning space

CONTINUED...

Within reach

While particularly appropriate for K to 6, reach ranges for children have relevance to education institutions at all levels because many campuses have become community centers used by the general population. Also, gymnasiums and stadiums, from middle and high school to colleges and universities, should be family-friendly.

Figure 3: Children's reach ranges

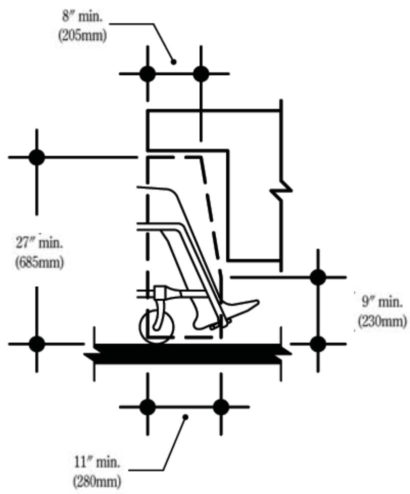
Forward or Side Reach	Ages 3 and 4	Ages 5 to 8	Ages 9 to 12
High (maximum)	36″ (915mm)	40″ (1,015mm)	44″ (1,120mm)
Low (minimum)	20″ (510mm)	18″ (455mm)	16″ (405mm)

Specifications for water closets serving children ages 3 to 12

	Ages 3 and 4	Ages 5 to 8	Ages 9 to 12
Water Closet Centerline	12″ (305mm)	12″ to 15″ (305 to 380mm)	15″ to 18″ (330 to 455mm)
Toilet Seat Height	11″ to 12″ (280 to 305mm)	12″ to 15″ (305 to 380mm)	15″ to 17″ (380 to 430mm)
Grab Bar Height	18″ to 20″ (455 to 510mm)	20″ to 25″ (510 to 635mm)	25″ to 27″ (635 to 685mm)
Toilet Tissue Dispenser Height	14″ (355mm)	14″ to 17″ (355 to 430mm)	17″ to 19″ (430 to 485mm)

Making room

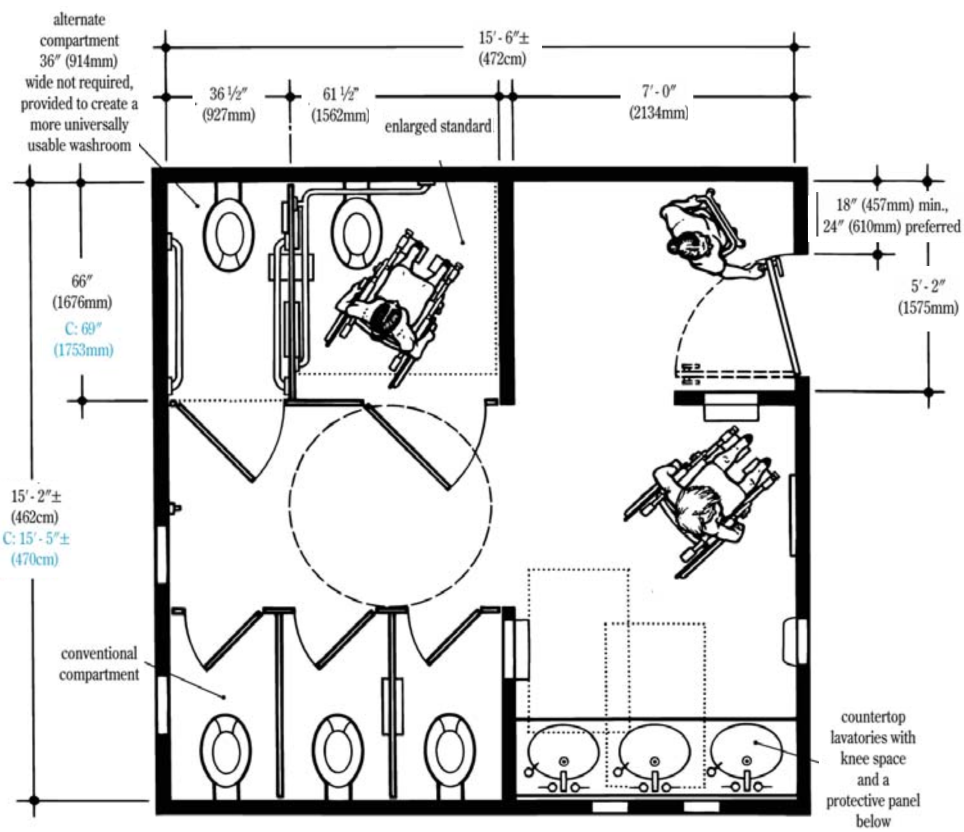
Figure 3: Lavatory clearances



Elevation

Universal design welcomes all

Figure 4: Small public washroom provides standard compartment and alternate compartment 36″ (914mm) wide.



Toilet compartment specifics

Figure 5: Toilet-paper dispenser mounting locations

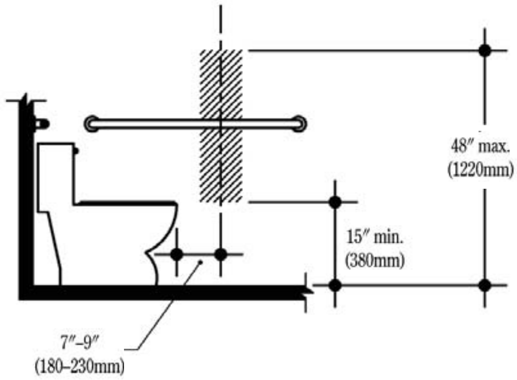
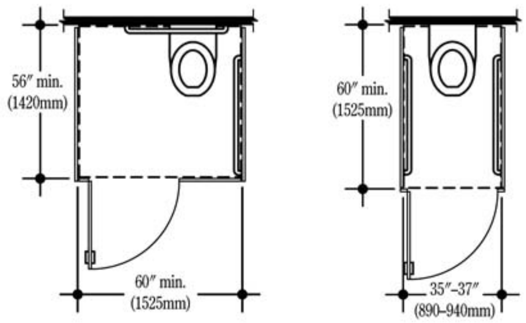


Figure 6: Toilet compartments



Wheelchair-accessible toilet compartment

Ambulatory-accessible toilet compartment

Being prepared

Revised guidelines were published by the Access Board (U. S. Architectural and Transportation Barriers Compliance Board) in July 2004, but they are not enforceable until adopted by the Department of Justice. Nevertheless, it serves the planner well to be apprised in advance, often preventing costly retrofitting following new construction and renovation. Also, always submit plans to city and state accessibility-code compliance authorities. ■

Gettelman is vice president, marketing, for Bobrick Washroom Equipment, Inc., North Hollywood, Calif. For a free copy of the Barrier-Free Planning Guide, call (800)553-1600, or visit www.bobrick.com. The guide, written by architectural and specification experts at the Center For Universal Design at North Carolina State University and Universal Design Solutions, Raleigh, N.C., is a "translation" of the guidelines and provides easy-to-follow layout examples.



At the University of Virginia, McIntire School of Commerce, Charlottesville, furniture was chosen with sustainability in mind. The tables and chairs were manufactured within 500 miles of the project site, contributing toward the "Regional Material" LEED point. Also, the water-based stain and top-coat system meets the certification for ANSI BIFMA, and therefore contributes toward "Low-Emitting Materials."
Photo courtesy of Philip Beaurline Photography

Renewable Selections

Green furniture choices can help education institutions deliver more healthful and environmentally sound buildings.

By Linda Pye

Studies show that well-designed interiors can influence education profoundly. Awareness of the importance of sustainability and its role within the learning environment is growing. Research indicates a possible link between sustainable facilities and better learning outcomes.

Data from the U.S. Environmental Protection Agency indicates that improvements in air quality, lighting and other features can increase productivity markedly. A related study by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) suggests that

a sustainable facility can improve a student's performance by 10 to 20 percent.

It comes as no surprise that education is one of the fastest growing markets for green buildings and LEED certification. The U.S. Green Building Council created the LEED (Leadership in Energy and Environmental Design) Green Building Rating System to encourage design and construction of high-performance, sustainable facilities. The shift toward architectural and site sustainability now is driving the need for a corresponding shift in furniture selection.

With about 10 percent of a building project's budget devoted to furniture, fixtures and equipment (FF&E), the impact of green design is rippling through the interiors industry.

The life cycle of furniture

Sustainability generally is defined as taking as little as possible from non-renewable resources. This definition sets up a framework for how to evaluate and choose furniture for a LEED project. First, look at the life-cycle stages of each product being considered. The decisions made by furniture manufacturers during the five life-cycle stages of a product's development have a direct effect on whether that product will contribute to LEED certification:

•**Material selection**. The first question is "What's it made of?" What are the specific chemicals in this product? Are they safe for people and the planet? Is the material a rapidly renewable resource? By asking these questions, the manufacturer is held accountable for decisions made during the first step of a product's development.

Manufacturers submit their products for testing to organizations such as the American National Standards Institute (ANSI), the Business and Institutional Furniture Manufacturer's Association (BIFMA) Furniture Emissions Standards, and McDonough Braungart Design Chemistry (MBDC) Cradle-to-Cradle Certification, to name a few. Cradle-to-Cradle Certification is becoming the most sought-after certification because of its comprehensive testing. MBDC, a leader in the materials chemistry field, is an independent certifier that evaluates a product's chemical makeup against 19 human and environmental health criteria. It is important to look for

products with low volatile organic compounds (VOCs) for cleaner indoor air and the elimination of carcinogens. These material selections will help determine points awarded in the LEED category "Indoor Environmental Quality—Low Emitting Materials."

•**Production**. Look at how a product is made. What are the manufacturer's practices for operating a sustainable plant? Does it generate pollutants? Are its waste materials recyclable? Are recycled or regional materials used to produce the item? Answers to these questions may contribute points in the categories "Material & Resources—Recycled Content & Regional Materials" and "Innovation in Design."

•**Transportation.** Getting furniture from the manufacturing plant to a building is the next consideration. How many miles will it travel, and how will it be packaged? The LEED rating system awards points for using products produced within 500 miles of a project. And because the furniture packaging affects the amount of trash created during installation, reusable blanket wraps or recyclable crates and boxes are preferred. Using local products in sustainable packaging can result in LEED points in the categories "Materials & Resources—Regional Materials and Construction Waste Management."

> It comes as no surprise that education is one of the fastest growing markets for green buildings and LEED certification.

•**Use**. How will the furniture be used? Selecting a product that is functional and durable is paramount. And depending on the use, flexibility may be a key consideration, too. Schools want to make sure that furniture will perform for many years and still look good. For a chair, ask "Is it easy to re-upholster?" For systems furniture, select a product line that is easy to reconfigure and offers the ability to purchase components on an ongoing basis. The use of existing and refurbished furniture meets LEED requirements for "Materials & Resources—Resource Reuse, 30 percent Furniture & Furnishings."

•**End-of-Use**. Recyclability is an important consideration when selecting sustainable furniture. "Cradle-to-cradle" describes a product that can be disassembled at the end of its life so that the parts can be recycled into new products—its materials are circulated perpetually in closed loops.

More furniture is being designed with this concept in mind, so ask the manufacturer "What end-of-life strategies have you developed for your products?" and "How quickly or easily can the product be disassembled?" If disassembly is long and involved and requires multiple tools, it is unlikely that a user actually will recycle the product. Many companies offer buy-back programs that help customers recycle products. Products also are being designed with labeled component parts to facilitate recycling. These leading-edge concepts fall under the LEED category "Innovation in Design," and offer the highest potential for points earned within one category.

Breaking it down

The furniture evaluation process may seem complicated and confusing, but there is good news. Many furniture manufacturers recognize that their sales depend on easy availability of this valuable information. Websites now provide product environmental data sheets listing LEED criteria for each chair, desk or table for sale, helping education institutions make informed, sustainable choices.

The green movement in education is not just a trend. The expectations of leaders, students and the public have changed. A cultural shift has taken place, and those who don't get on board will be left behind.

Even with the economic downturn, it is possible to have a financially realistic and defensible approach to sustainability. By extending sustainable design into the interior spaces via green furniture choices, education institutions can help deliver more healthful and more environmentally sound buildings. ■

Pye, IIDA, ASID, is the founder and managing director of Pye Interiors, Charlottesville, Va. She can be reached at linda@pyeinteriors.com or (434)971-1393.

WEB 101

Also read "Healthful Choices," an article about selecting green furniture that was featured in March, at ASUmag.com/furniture.

NOTABLE

10 Percentage of a building's project budget devoted to furniture, fixtures and equipment (FF&E).



Good hygiene practices that emphasize handwashing or hand sanitizers, along with proper maintenance, can help reduce the number of infections in schools each year.

Healthful Cleaning

The importance of infection control in education institutions.

By Charles P. Gerba

It's inevitable: Every school year, parents, teachers and administrators must deal with overwhelming numbers of sick children. In fact, according to the Centers for Disease Control and Prevention (CDC), the average child catches at least eight colds in a year, and kids in the United States miss as many as 189 million school days each year because of colds.

Typically, precautionary measures have focused on flu shots and other preventive care. Although these actions are important, administrators also should concentrate on the way their schools are being cleaned. Many staff responsible for cleaning schools and removing germs are not trained properly and are using outdated cleaning methods that don't eradicate bacteria. By improving the way schools are cleaned, administrators can fight germs on the ground level and effectively keep kids and teachers in the classroom.

Hygiene is not a dirty word

The significance of good hygiene and cleaning often go unrecognized in controlling the spread of common diseases. In a recent survey of the medical profession, the British medical journal, *The Lancet*, reported that hygiene and sanitation have had the biggest influence on the spread of human diseases in the history of humankind, even more than antibiotics and vaccines. Even today, few people are aware that four out of five common infections (colds, flu, diarrhea, and skin infections) can be spread through the environment—air, water, food and contact with surfaces.

For most of these common illnesses, effective vaccines have not been developed, and we are subjected to these infections throughout our lifetime. Adults will experience two to three respiratory infections per year, and children double that. This results in almost 1 billion respiratory infections per year in the United States, and the cost to society is billions of dollars.

However, good hygiene practices that emphasize handwashing or hand sanitizers, along with proper cleaning of work and school environments, can reduce significantly the number of infections each year. They also can prevent school closures and other cancellations, such as sporting events or workshops.

The challenge

Germs continue to challenge our ability to control them. They can change rapidly and develop resistance to the antibiotics used to treat infections. These new variations are more likely to cause illness and result in more serious infections. Two examples challenging education institutions are the norovirus and MRSA (pronounced mersa), often referred to as a "superbug."

Norovirus is the most common cause of viral diarrhea in young children and adults. New variations became evident a few years ago, resulting in more people becoming susceptible and causing more serious illnesses than in previous years. The illness usually lasts only one to two days, and is spread easily by feces and vomit. Some 70 to 80 percent of the people infected by the virus experience vomiting, so its spread can be difficult to control in institutions and public places.

It quickly became the curse of the cruise-ship industry. It spread rapidly among passengers, and some ships had to return to port and cancel cruises. It

also has caused the closing of schools, childcare facilities, universities, residence halls, summer camps, and even emergency rooms in hospitals.

The virus can be transmitted only by swallowing it. It can spread easily by getting the virus onto your hands and placing them in your mouth. This happens by touching virus-laden surfaces, such as a tabletop, and then touching your mouth. Consider: Adults put their fingers in their mouth about six times an hour, and small children bring fingers to their face 40 to 60 times an hour. It has been found that when people vomit, the norovirus can spread many feet through the air and contaminate surfaces that people may touch later. Immunity is very short-lived for the norovirus, so children and teachers can become infected with the same virus every school year. The virus can lurk on surfaces for weeks or even months. Thus, it is not surprising that outbreaks have been traced to the use of public restrooms and other shared facilities.

MRSA is a bacterium capable of causing serious skin and other infections. MRSA, or methicillin-resistant Staphylococcus aureus, is a bacterium noted for its resistance to certain types of antibiotics. It initially was a problem only among persons being treated for other illnesses in hospitals, but a new type has spread among the general community and is referred to as community-acquired MRSA. This appeared in the late 1990s, and now has spread across the country to become the most common cause of skin infections among individuals seeking medical attention. This organism is a common cause of skin infections among athletes and children in the inner city. MRSA can invade other tissues of the body and cause life-threatening infections.

It is estimated that more than 17,000 people may die from MRSA infections each year in the United States, which is more than the number of fatalities attributed to AIDS. Most of these MRSA deaths result from infections acquired in hospitals or other healthcare institutions, serious infections also occurred in the general population. One recent study showed that 85 percent of MRSA infections are acquired in the community. Most are skin infections that are treated easily; however, it is a virulent organism and can spread easily to other organs.

One of the problems with combating the spread of MRSA is that a person who is not ill can carry it in his or her nose. It is estimated that 2 to 3 percent of adults and children carry MRSA. During a normal day, they can spread it with their hands to other individuals by skin-to-skin contact or through interaction with the things they touch during the day. It is a fairly hardy organism and can survive in the environment for long periods of time. For example, it has been found to survive on tabletops for 12 days and plastic surfaces for 11 days.

MRSA is an increasing problem among high school athletes. A recent survey of 186 high school athletic departments in Texas found that 60 had reported MRSA infections among their athletic departments.

One of the problems with combating the spread of MRSA is that a person who is not ill can carry it in his or her nose.

Disease control

Proper hygiene and cleaning are effective mechanisms in controlling the spread of infections caused by norovirus and MRSA. The CDC lists five factors that make it easier for MRSA to spread in schools, which they refer to as the five Cs:

•Crowding.

•Frequent skin-to-skin contact.

•Compromised skin (cut and abrasions).

•Contaminated items and surfaces.

•Improper cleaning.

The agency emphasizes that to protect people from being exposed to MRSA, it is important to maintain a clean environment. Establish cleaning procedures for frequently touched surfaces that come into direct contact with people's skin. Sanitize surfaces with detergent-based cleaners and disinfectants to remove MRSA from the environment. Encourage frequent handwashing and the use of alcohol hand sanitizers.

Germy classrooms

So how germy are classrooms? A group at the University of Arizona has done a number of studies to answer that question. Although only a few types of bacteria cause illness, knowing where bacteria are in a classroom reveals where the greatest risk of exposure to potential disease causing microbes can occur. This is a reflection of how often areas are touched and cleaned. School teachers have more bacteria on their desks and work areas than any other professions that were studied (doctors, lawyers, accounts, news reporters, bankers)—more than 20 times anyone else. This probably is because of their repeated contact with children, who experience more infections than adults, and the amount of material that crosses their desks every day. In the study, bacteria were found in the greatest numbers on the following surfaces:

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Also read "Measured Results," from the April 2009 issue, at ASUmag.com/maintenance.

•Water-fountain toggle.
•Pencil sharpener.
•Computer keyboard.
•Faucet sink handle.
•Student desktop.
•Classroom entrance doorknob.

In these same classrooms, the influenza virus and the norovirus are found on student desktops most often, followed by sink faucet handles and entrance doorknobs. Influenza virus was detected on up to 50 percent and norovirus up to 22 percent of the surfaces throughout the day during the winter, when these viruses are common.

Can good hygiene and cleaning practices reduce illness in school children? There's no easy answer. Children may acquire infections at home or from playing with other children, or other activities outside school. This makes it difficult to prove the impact of proper cleaning and disinfection. However, in several studies, handwashing and the use of hand sanitizers have been shown to reduce illness and absenteeism rates among both children and adults by 30 to 50 percent.

To show the impact of proper cleaning and disinfecting, a study called for cleaning and disinfecting the classroom desks of first-, fourth- and fifth-graders after the end of each school day. Absenteeism was reduced by 50 percent compared with classrooms where this was not done. In another study, the impact of providing an alcohol-based sanitizer and disinfecting key surfaces in the classroom resulted in a reduction by more than 50 percent in the occurrence of noroviruses on surfaces. Thus, it was not surprising that student absenteeism because of diarrhea also was reduced (Sandora, T.J., M.C. Shih, and D.A. Goldmann. 2006. "Reducing absenteeism from gastrointestinal and respiratory illness in elementary school students: A randomized, controlled trail of an infection-control intervention." *Pediatrics*. 121:1555-1562).

However, it is important to emphasize the words "proper cleaning." Improper use of cleaning tools (mops, cloths) can result in additional contaminations of surfaces. After an outbreak of norovirus at a university, crews that were cleaning improperly increased the number of surfaces in residence hall rooms contaminated with norovirus. Thus, proper use of cleaning tools and use of disinfectants is essential in reducing the spread of disease-causing microbes. ■

NOTABLE

8 Number of colds that the average child catches each year.

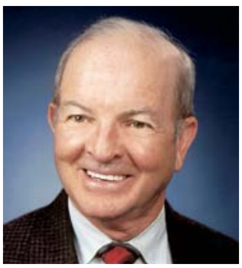
Source: Centers for Disease Control

Gerba is a microbiology professor at the University of Arizona and a spokesman for the Coverall Health-Based Cleaning System. He can be reached at gerba@ag.arizona.edu.

Vendor as Consultant

Is it a conflict of interest?

C.WILLIAM DAY



Day is senior analyst at KBD Planning Group, Young Harris, Ga., a firm specialized in educational facilities and technology planning. He can be reached at bday@kbdplanning.com. www.kbdplanning.com

Choosing the right technology consultant is a critical business decision. There is a real difference between an independent technology consultant and a vendor/consulting firm.

The technology-services profession seems to be constantly reinventing itself. Not too long ago, the educational-technology business barely existed: Those selling technology to education institutions generally were selling hardware or software. Profits were generated through markups on these hard goods, and any services that were provided generally were delivered by the manufacturers or their authorized dealers. Prices were high, the products were complex, the market was difficult, and schools typically were on the lagging edge of technology.

In today's marketplace, some technology vendors have sought to expand their services. But while consultants sell time, advice and act as part of management to education institutions, vendors sell products, hardware, software and installation services. The primary goal for a consultant is client success; for the vendor it often is bottom-line profit. Therefore, how can vendors serve an education client as consultants if they also want to sell products?

Consider why technology consultants exist in the first place. They are essentially a substitute or outside support for an in-house IT department. Now, imagine if an education institution hires a vendor that also does IT consulting. The vendor may recommend that a school buy hardware and software that the vendor sells, and then may be allowed to submit a bid to the school. That is an obvious conflict of interest.

But many vendor/consultant IT service providers—the ones considered to be vendors rather than consultants—are going even further in that direction. They are both recommending and selling nearly every bit of technology that an education institution needs. And to further cement the relationship, they are bundling these goods and services together in long-term service contracts.

Many people think it is wrong for a vendor/consultant to become the "trusted adviser" to a school, and then use that trust to sell a whole slew of goods and services that have been designed to generate profits. No one is suggesting that any particular vendor/consultant firm has evil intentions or that clients are receiving substandard services. But because of the conflict of interest, some worry that it may be difficult for institutions to find consultants that provide objective opinions.

Many factors go into a search for the right technology consultant. A consultant who is vendor- and manufacturer-neutral is likely to play a more integral role in achieving a school's long-term goals. That is why it is essential to treat the research and selection process for a consultant in the same manner as hiring a full-time employee. ■

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An Eye-Opener

We look, but we don't see.

JAMES E. RYDEEN



Rydeen, FAIA, is an architect/facility planning specialist and former president of Armstrong, Torseth, Skold & Rydeen, Inc. (ATS&R), Minneapolis. He can be reached at Jrydeen@atsr.com.

Do students and teachers experience the physical environment without realizing what they are seeing? Would unnoticed improvements to the learning environment enrich the educational experience? What an architect's trained eye sees is not necessarily what an occupant sees. For most people, architecture is experienced unconsciously rather than consciously.

The Academy of Neuroscience for Architecture (ANFA) is providing valuable information on the influence of the physical environment on teaching performance and student achievement. An ANFA workshop looked at several basic premises:

•Brain development between ages 5 and 12 is significant and understood. Cognitive psychologists and neuroscientists are intrigued with how cognitive capacities change with age.

•There is an intuitive, but not well-documented, understanding that the architectural attributes of classroom spaces affect cognitive (learning) activity.

•Neuroscience research is likely to provide evidence to support this intuition—including the advantages of classrooms geared to stages in brain development.

One activity in the ANFA workshop focused on attributes of the spatial environment that would enable and positively affect learning:

•Schools should offer a hierarchy of spaces, from private to large-group, in an adaptable structure.

•Control of the environment is essential to the teacher and the learner; manipulability of space can enable active participation of the learner.

•A school should reflect the culture of the community.

•Appropriate scale matters to the learner and the learning activity.

•Space affects students' sense of self and others.

•A setting that evokes strong emotion may improve recall.

•An environment that offers balanced qualities may be most satisfying and conducive to learning, e.g. security and risk, prospect and refuge, active and quiet, social and individual, indoors and outdoors.

•When activity is intentional, learning may be stronger. Therefore, allowance for choice in activity and environment may optimize learning.

Our perceptions are influenced by the physical environment. The brain responds based upon each person's culture and generational traits. Each generation has distinct attitudes, behaviors, expectations, habits and motivational buttons. Therefore, incorporating generational traits with human factors in design emphasizes people-oriented design in behavioral terms as they interact and use spaces.

Architecture affects our intellect and emotions, influences our performance and motivates achievement—mostly on a subliminal basis. We become conscious of our environment only on a need-to-know basis: We look, but we don't see. ■

Recognizing Green

Prepare your program for the 2009 Green Cleaning Awards.

STEPHEN ASHKIN



Ashkin is executive director of the Green Cleaning Network, a 501(c)3 not-for-profit educational organization.
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SteveAshkin@GreenCleaningNetwork.org

It is again that time of the year to nominate your program for the 2009 Green Cleaning Award for Schools and Universities. The awards are sponsored by *American School & University* magazine, the Green Cleaning Network and the Healthy Schools Campaign. Winners will be featured in the December issue of the magazine and receive a certificate recognizing their achievement. The 2008 award winners were announced at the inaugural Green Clean Schools National Summit held November 12, 2008, in Washington, D.C.

The award recognizes the best in green-cleaning programs within education institutions across the nation. All types and sizes of education institutions are eligible to enter.

The comprehensiveness of the quality of your green cleaning program is the ultimate criteria for determining winning programs. Judges will look to the five criteria from *The Quick and Easy Guide to Green Cleaning in Schools* to determine which programs stand out above the rest. Those criteria: the use of green-cleaning products; the use of green equipment and supplies; an adoption of green-cleaning procedures; the use of green paper and plastic products; and a demonstration of outreach to other parties outside the cleaning staff to strengthen the program. Judges for the contest are school health advocates, cleaning-industry experts, green-cleaning professionals and school stakeholders.

Education institutions will be asked to submit a written description on these elements of their green-cleaning program. They need to gather the following information:

•**The history of the program.** What has it accomplished, and where is it going?

•**Cleaning procedures and strategies.** What is your program doing to reduce general health impacts? Do you have special strategies in place for the use of disinfectants or to encourage handwashing? Have you established an impressive green floor-care system?

•**Policies or processes used to engage others.** Submit examples of policies, training materials and other communications that demonstrate outreach to teachers, students, visitors and staff.

•**Innovations.** How has the program reached "outside the box," be it a product or an outreach strategy?

•**Evaluation methods and results.** How do you measure your program's effectiveness and how often? What documentation do you have that demonstrates your success? Has your institution enjoyed reduced absenteeism and greater instructor retention?

•**Recognition.** Share any awards, certifications or recognition your green cleaning program has received.

Application information is available at http://www.asumag.com/green_cleaning_award. You also can see the 2008 winners, whose programs are raising the bar for green cleaning. ■

Cleaning success story

Flooring challenges are handled systematically



Backpack vacuums at the University of Massachusetts, Amherst

Pro-Team. The University of Massachusetts (UMASS), Amherst, poses daunting challenges to the cleaning staff. Daily, 30,000 to 35,000 people use the seven buildings, which cover 537,237 square feet. It is a diverse combination of spaces, and flooring is a mix of vinyl, stone and carpeting.

Because the public buildings of UMASS are open seven days a week with extended hours and have heavy foot traffic, Jim Motyka, auxiliary services supervisor, and his staff have to work day and night to keep up. The department has a staff of 76 full-timers and other part-time student employees.

Keeping pace required a plan. UMASS began using a program created by a Salt Lake City-based company called ManageMen that has a systematic approach to cleaning. Called Operating System 1 (OS1), this comprehensive cleaning process is designed to increase overall building cleanliness, reduce costs, cut waste and improve custodian safety. OS1 uses ProTeam Super CoachVac backpacks, equipped with advanced Four Level Filtration and a large, 10-quart filter capacity for the most demanding cleaning jobs.

"Understanding what the OS1 system does to the indoor built environment and how connected each part is to cleaning for health was an important step to working better," says Moytka. "Our annual audits from ManageMen reveal that we've received 84 percent or better scores, which means we are cleaning in a healthier and a greener environment."

OS1 is a green cleaning process that uses four GS-37 daily-use chemicals. The hard-floor maintenance program uses micro-fiber flat mops paired with dual-sided split buckets. As a result, floors need to be stripped only every five to 10 years. Additional benefits include inventory reductions, and chemical packets go to the incinerator instead of becoming landfill.

Moytka sees green with his fleet of Super CoachVacs, too. Before the backpacks, the staff used uprights on carpets and dust mops, Kentucky string mops and auto scrubbers on hard floors. Switching to backpacks has been a big part of the cleaning success story at UMASS, and with the proper training, the staff quickly accepted them as a better cleaning tool for a more healthful and safer work environment.

Circle 165 for more information ■ freeproductinfo.net/asu



Portable dispensing system

Betco Corporation. FastDraw Freedom Portable dispensing system fills bottles, buckets, automatic scrubbers, and can be used for foaming applications—all with one unit. FastDraw chemical management provides significant waste reduction over RTU products. The system has no tubes to connect, metering tips to install or dispensers to mount.

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Fan-coil unit

Johnson Controls. A wide range of fan-coil units for commercial and light-commercial HVAC systems are available from 250 to 2,000 CFM, with exposed or concealed cabinets, in a variety of configurations. For cooling duty, these fan-coil units can be equipped with a chilled-water coil; some units can be equipped with a DX coil instead, which can be configured for heat-pump duty. In heating mode, the units can use electricity or hot water; some use steam instead.

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Furniture line

Smith System. The UXL furniture line offers high schools and colleges an integrated system—from classrooms to commons—without compromising design or functionality. The line includes chair and desk options for various teaching and learning styles. Products include a tablet-arm chair, mobile chair, stacking chair, nest and fold chair, beam seating, diamond desk, student desk, and nest and fold table.

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CONTINUED...

Energy-conserving spirit

Demand response system contributes to a more sustainable campus



Delaware Valley College, Bucks County, Pa.

EnergyConnect. Founded in 1896 as the National Farm School, Delaware Valley College is a private, four-year, coeducational college situated on more than 570 acres in Bucks County, Pa., 35 miles north of Philadelphia. The school offers more than 40 academic programs including counseling psychology, criminal justice, business administration, equine studies, conservation and wildlife, small animal science and horticulture.

The college first was introduced to EnergyConnect's demand-response programs in 2006, when the school enrolled in a voluntary program to reduce electricity use during times of peak demand or high energy prices. The money that the college has earned by participating in demand response has been integral to the funding of a broad range of activities and capital improvements that contribute to a more sustainable campus.

"Partnering with EnergyConnect's demand response has revolutionized the way we manage our energy consumption, allowing us to reduce our overall energy use and generate new cash streams that can be directed towards future energy-efficiency efforts," says Ted Staniewicz, director of physical plant operations.

Enrollment in the program is credited for creating a campuswide spirit of energy conservation that continues to gain momentum and generate income.

As part of its load-shedding strategy, the system enables the campus' automated temperature controls for chillers and fans to shed load in response to a curtailment event. The automatic pumps for the campus' 50,000-gallon water tower also can be switched to an emergency generator during times of peak electricity demand.

To achieve even more load shedding, Staniewicz sends out a campuswide e-mail alert requesting that students and faculty turn off all unneeded equipment, such as lighting, copying machines and coffee pots. The campus response has exceeded expectations and led to more than double the projected earnings.

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Wireless wall clock

Lathem. AirTime, a new wireless synchronous wall clock system, is designed to address precise timekeeping needs. It offers accurate time throughout a facility without the cost or complication of running wires to each clock location. A single AirTime transceiver can communicate time to an unlimited number of clocks in an entire building, or across a large campus.

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Ceiling panels

USG. FROST ClimaPlus ceiling panels are fine-textured acoustical panels that feature excellent sound control and resist sagging. They also contain a patented broad-spectrum antimicrobial standard formulation that inhibits and retards the growth of mold and mildew. The panels are made with a cast process that enhances their surface appearance, and provides excellent sound absorption and durability. The abuse-resistant surface cleans easily with a brush or vacuum.

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Basket lockers

Salsbury Industries. Constructed of 12-gauge steel frames that are powder-coated black, basket lockers are an excellent addition to recreation facilities. Measuring 40 inches wide and 31 inches high, basket lockers are 13 inches deep. Each basket locker features nine 12-inch-wide by 8-inch-high by 12.5-inches-deep zinc-plated steel and wire baskets. Each of the individual baskets contains a hasp and can accommodate padlocks. Basket lockers are available as unassembled or assembled units.

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Front-load washer

Maytag Commercial Laundry. The Energy Advantage High Efficiency (HE) Single-Load Front-Load Washer is designed to cut utility costs by up to 60 percent. Also, it is the world's first commercial laundry single-load washer to be ENERGY STAR- and CEE Tier III-qualified. The large tub and door opening make loading and unloading easy, and new bellows to the door interface reduce damage to clothes. With no agitator, the washer holds substantially more laundry.

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Bird-control system

Bird-B-Gone, Inc. Bird-B-Gone Mist is an advanced hazing system that releases a fine mist into the air to deter pest birds from large, open spaces. The unit distributes methyl anthranilate, a non-toxic grape extract effective in repelling pest birds. The extract irritates the birds' trigeminal nerve and mucous membranes through entry in the eyes, nose or mouth. Birds do not like the sensation caused by the extract and will take flight from the area being treated.

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Solid-surface systems

Sloan Valve Company. The new Drain Deck and Bio-Deck style Sloan-Stone solid-surface lavatory systems match water-efficient and durable electronic faucets with vandal-resistant sinks. New Bio-Deck lavatory styles are made from bio-material: Ground-up corn cobs replace the petroleum-based material that typically is used in solid-surface systems. Bio-Line lavatories come with either oval-shaped, drop-in stainless-steel bowls or undermount porcelain bowls.

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CONTINUED...

An inspiring gesture

Junior high school is enjoying new furniture thanks to a donation

Sagus International, Inc. Students and teachers at JV Martin Junior High School, Dillon, S.C., arrived at school in May to find that their classrooms and cafeteria had been remade over the weekend with all-new donated furniture.

The company was inspired to donate after hearing the story of JV Martin eighth-grader Ty'Sheoma Bethea, who made a passionate plea to President Barack Obama to improve the condition of her 113-year old school. President Obama invited Ty'Sheoma to his Feb. 24 address to Congress, where she sat next to First Lady Michelle Obama and listened as the President read aloud from her letter.



JV Martin Junior High School, remodeled cafeteria, Dillon, S.C.

The company, impressed by Bethea's courage and passion for the school, stepped in to help. Four trucks with more than 2,000 pieces of furniture traveled from Texas and Chicago to Dillon. A crew of 25 workers supplied by Sagus's South Carolina dealer, Nu-Idea School Supply Company, spent the weekend removing all of the school's old furniture (which will be recycled and used in future products) and replacing it with new furniture.

"This is really a wonderful gesture, and it couldn't come at a more important time or at a more symbolic place," said Jim Rex, South Carolina's state superintendent of education. "It raises the bar for what our expectations should be in every school."

JV Martin now has state-of-the-art, ergonomic and environmentally friendly desks, chairs, cafeteria tables and seating that are designed to fit today's students and foster collaborative learning. The remodeled cafeteria, a highlight of this effort, includes specially designed tables that feature JV Martin's school colors and mascot.

The company and its partners donated all the furniture, labor and costs—an investment of roughly $250,000.

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Small scrubber/dryer

Nilfisk. The CA331 scrubber/dryer is compact in size and can clean under furniture and in tight, congested areas where other scrubber/dryers cannot fit. The machine is easy to transport: it weighs just 22kg, and the handle can be folded on the machine. It has two brushes/pads giving 15kg of down pressure to ensure real scrubbing efficiency. It can be operated going forward or backward.

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Online video recorder

Brivo Systems. A new addition to the Software-as-a-Service (SaaS) access-control solution is available: an integrated, online video recorder (OVR) that streams IP video from customer locations to a secure Web hosting facility. Developed in partnership with Axis Communications, the new video service requires only an Axis network camera to be located at a site. From the ACS WebService application, customers can view live and event-tagged video remotely using a standard Web browser.

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Hands-free dryer

Excel Dryer, Inc. The XLERATOR hand dryer dries hands three times faster (in 10 to 15 seconds) and uses 80 percent less energy than conventional hand dryers. It also delivers a 95 percent cost savings compared with paper towels; is the only hand dryer to be MADE IN USA-certified; and the first hand dryer to achieve GreenSpec approval. Unlike models that require users to insert and remove their hands, the XLERATOR does not require instruction.

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Handwashing station

Bradley Corp. The new Advocate Lavatory System is a personal handwashing station that provides an all-in-one experience. Access to water, soap and hand dryer are all available within a user's individual space. The system is equipped with a water-conserving 0.38 gpm faucet, well below the 0.5 gpm required for public lavatories. In addition to being available in durable Terreon solid surface, the lavatory also is available in TerreonRE recycled solid-surface material, which is made of 25 percent pre-consumer recycled content and a bio-based resin.

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UVC kit

Steril-Aire, Inc. A new UVC Kit for Air Handlers can be used in a wide range of HVAC applications to destroy microorganisms, including flu viruses, bacteria and mold. The kit delivers UVC technology to fan coil-units, unit-ventilator systems and indoor-air handlers with coils up to 84 inches (213.4 cm) with dual access. A slim power supply and convenient mounting options enable installation flexibility close to the face of the coil for continuous coil cleaning and optimum air quality.

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High-efficiency motor

Greenheck. The new Vari-Green motor is a brushless DC (electronically commutated) high-efficiency motor that runs off a 115-volt single-phase input. It runs quieter, cooler and offers higher efficiencies with improved speed-control capabilities. The motor is capable of operating from 20 to 100 percent (80 percent turndown) of full speed vs. 70 to 100 percent (30 percent turndown) for PSC motors. The motor is available in ¼-, ½- and ¾-HP sizes and offers three different control options: 0-10 VDC input wiring, a motor-mounted dial or a wall- mounted dial.

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CONTINUED...

Working hand in hand

Lock system upgrade uses existing hardware

Videx. The University of the Pacific, situated in central California, was looking for a lock-system upgrade. The school chose the CyberLock Electronic Lock System because it uses the mechanical lock hardware already present in buildings. Another factor in the university's decision was the capability of the product to work hand-in-hand with its existing online and offline card systems.

"So many of our buildings have historic significance, so preserving appearance and structure was very important to us," says Robert Miller, card system manager. "No structural modifications or wiring were required to install the system. To convert our existing mechanical locks to electronic locks, we simply replaced each lock's core with a CyberLock electronic cylinder."

With the new electronic lock system in place, each person's key is programmed with individual access privileges and time schedules. If someone loses an electronic key, the key can be deactivated quickly.

"Before CyberLock, we always had to worry about the thousands of mechanical keys out there with 24/7 access to our buildings," says Miller. "We had no clear, accountable way to know if these keys were lost or being copied and used by unauthorized people."



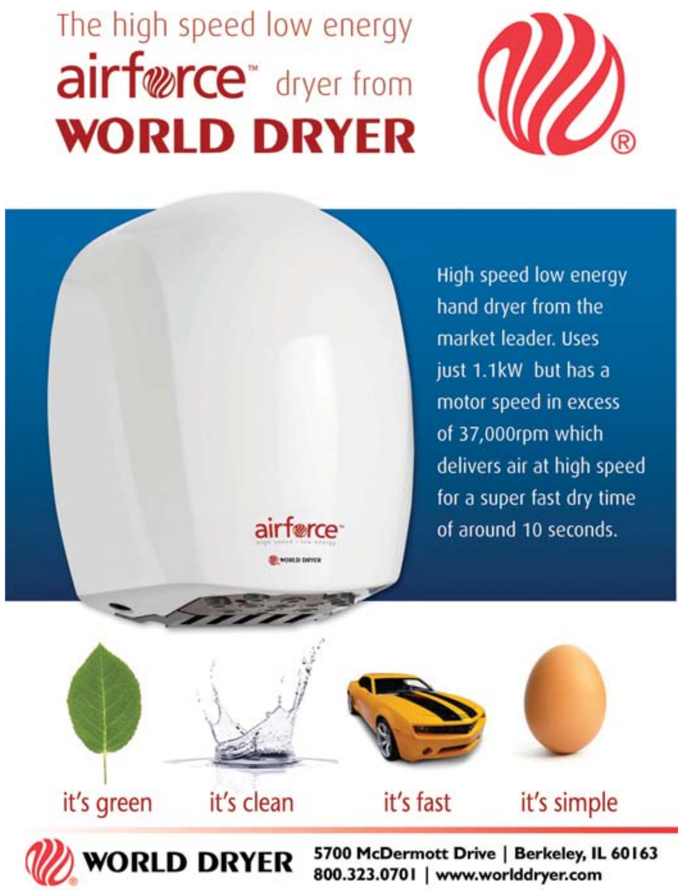
The University of the Pacific, Stockton, Calif.

The system's audit trail also was important. One benefit is reducing exposure to HR incidents: officials can tell who and when someone has entered particular buildings at any given time through the audit reports. The system shifts more responsibility onto people when they know that every time they enter a building, it is being recorded.

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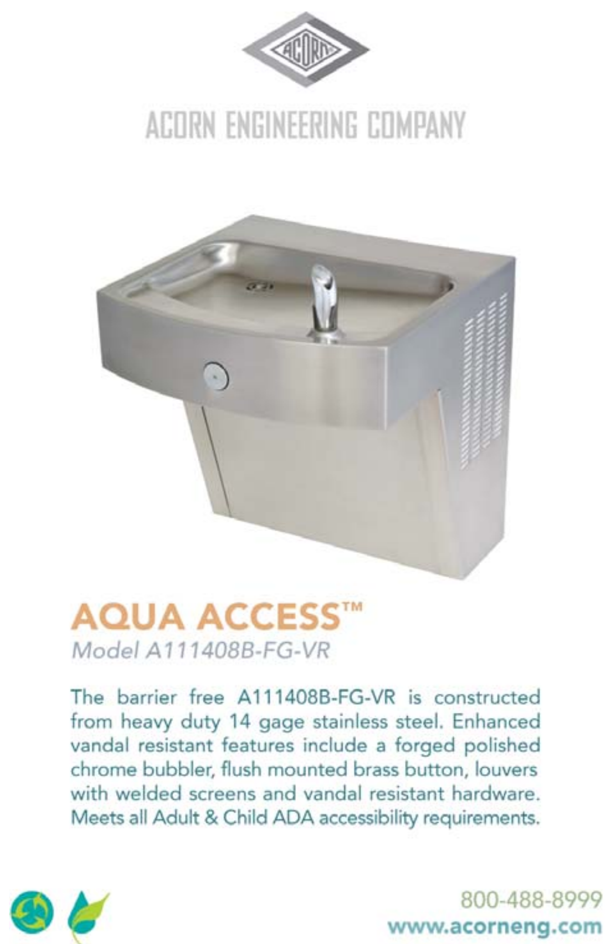
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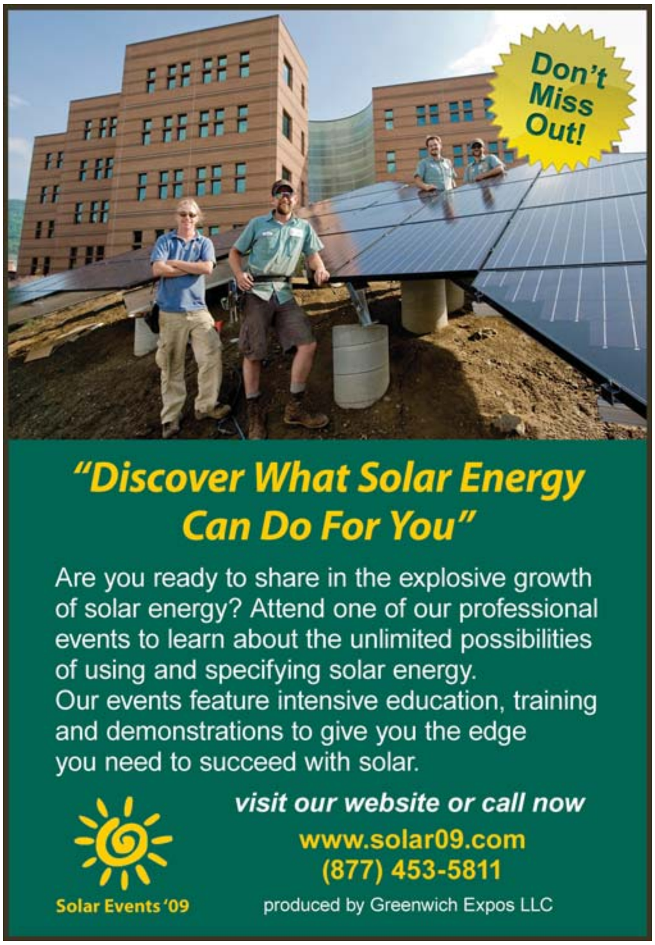
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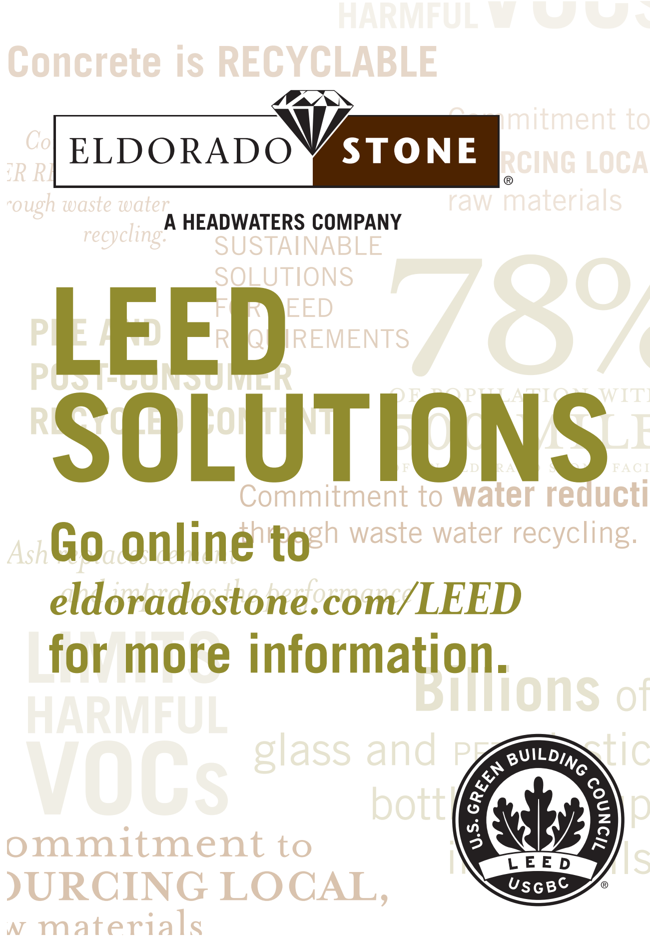
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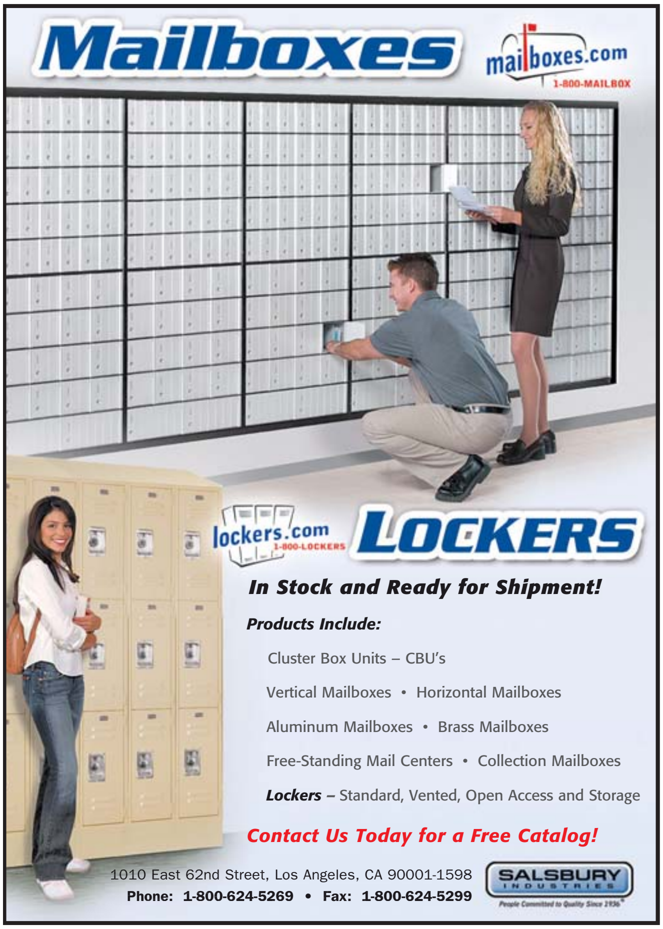
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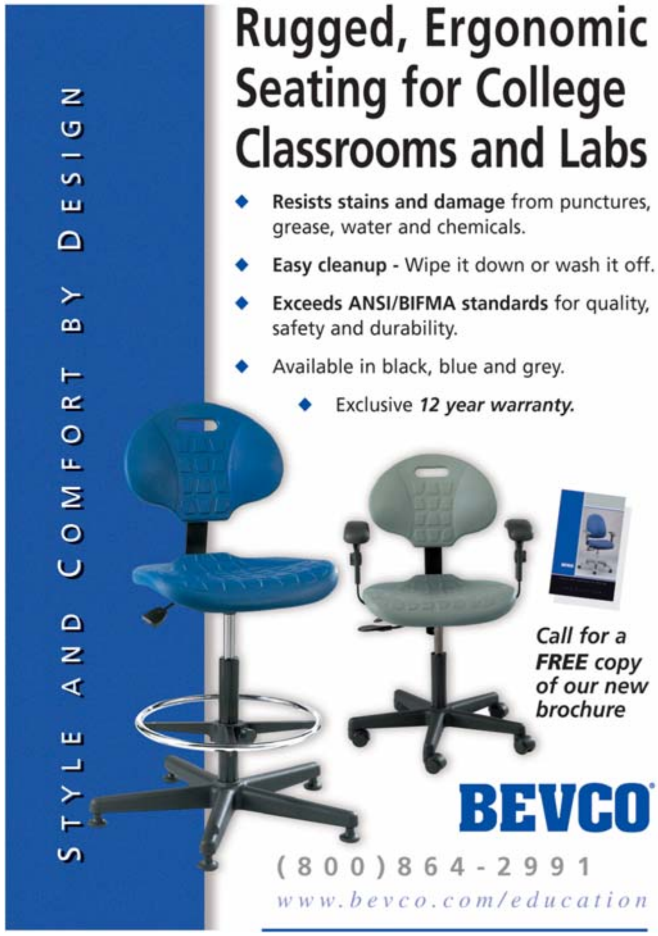
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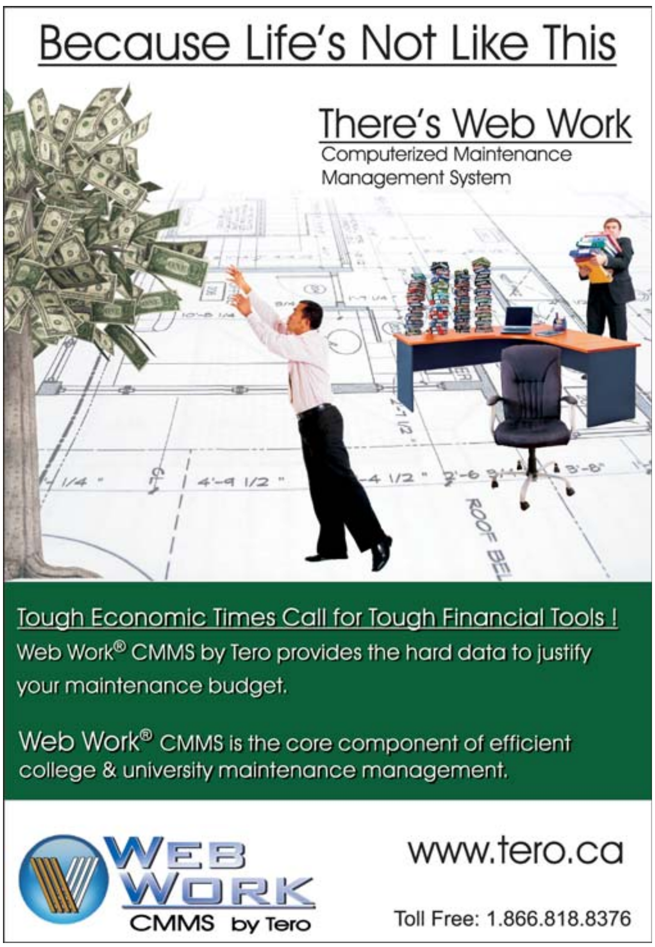
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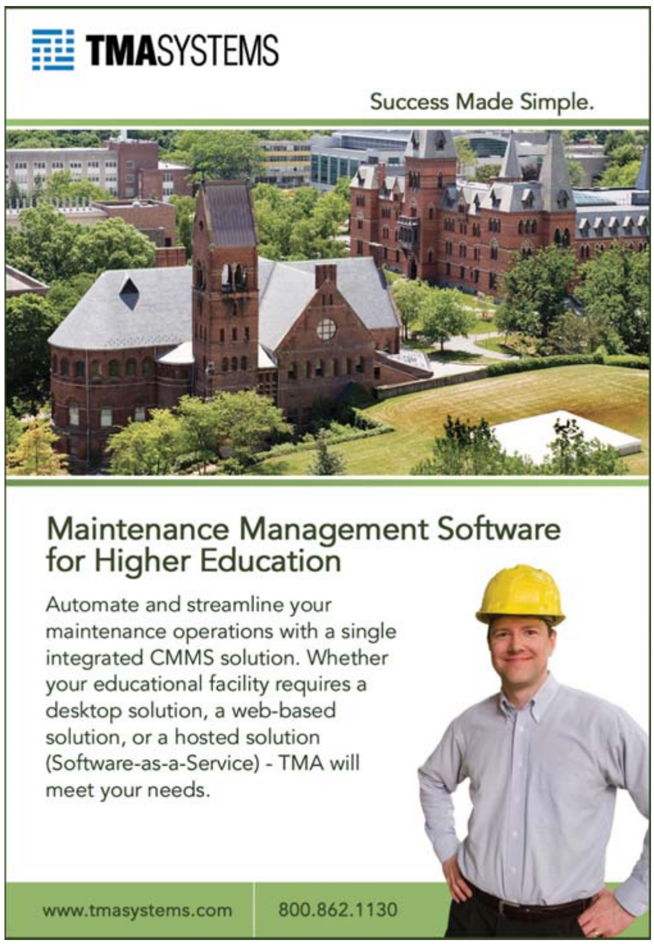
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D ❑ Digital
P ❑ Print

3. Which best describes your job title? (check only one)

J ❑ **Buildings & Grounds/Physical Plant/Facilities:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of: ____________
G ❑ **Business/Finance:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of:____________
E ❑ **District Superintendent of Schools**
F ❑ **Facilities Planning:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of:____________
C ❑ **Housing/Residential Life:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of:____________
H ❑ **Purchasing:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of: ____________
S ❑ **Safety & Security:** Asst. Supt. of:, VP of:, Director of:, Manager of:, Supervisor of:____________
N ❑ **Architect, Engineer or Consultant**
X ❑ Other____________ (please specify)

4. Which category best describes your work in Educational Administration? (check only one)

1 ❑ Public School District (K-12)
3 ❑ Private School (K-12)
6 ❑ Two-Year College (Public or Private)
5 ❑ Four-Year College/University (Public or Private)
2 ❑ Post-Secondary School (medical, law, seminary, etc.)
4 ❑ Independent or Government Vocational School (including school operated by industry, union, government or association)
7 ❑ Architectural, Engineering or Consulting Services
0 ❑ Other ____________ (please specify)

5. What is the enrollment size of your school district or university/college? (check only one)

L ❑ 30,000 or over
K ❑ 25,000-29,999
J ❑ 20,000-24,999
P ❑ 15,000-19,999
N ❑ 10,000-14,999
G ❑ 5,000-9,999
F ❑ 2,500-4,999
E ❑ 1,000-2,499
M ❑ Under 1,000

6. Total number of buildings:

1 ❑ 100+
2 ❑ 76-100
3 ❑ 51-75
4 ❑ 21-50
5 ❑ 11-20
6 ❑ 6-10
7 ❑ 5 or less

7. Total square feet of buildings directly involved with:

1 ❑ 10 million+
2 ❑ 7-9 million
3 ❑ 4-6 million
4 ❑ 1-3 million
5 ❑ 500,000-999,999
6 ❑ less than 500,000

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